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| FROM: Controlling DoD Organization: Springfield Armory, Springfield, MA. |
| AUTHORITY |
| USARRADCOM ltr dtd 17 Aug 1979; USARRADCOM ltr dtd 17 Aug 1979 |

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24513

SPRINGFIELD ARMORY

SPRINGFIELD, MASSACHUSETTS

RESEARCH AND DEVELOPMENT



DDC
RECEIVED
MAR 24 1967
A

NOTES ON DEVELOPMENT TYPE MATERIEL

DESCRIPTION OF U. S. RIFLE, CAL. .30,
M1 - T65E1 AMMUNITION.

PROJECT NO. TS2-2015

PREPARED BY SPRINGFIELD ARMORY UNDER THE DIRECTION
OF THE OFFICE, CHIEF OF ORDNANCE

ITEM .30 R M1 DATE 14 FEB 49 SA-NM 11-1036
Revised 6 SEPT 49

Springfield Armory

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DOWNGRADED AT 12 YEAR
INTERVALS: AND AUTOMATICALLY
DECLASSIFIED. DOD POL 1285.10

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(14) SA-NM-11-1036

/shp

(6) NOTES ON
DEVELOPMENT TYPE MATERIAL
FOR

U.S. RIFLE, CALIBER .30 M1 - T65E1 AMMUNITION

(8) U

There is no copyrighted matter contained in
this report.

RESEARCH AND DEVELOPMENT DIVISION

SPRINGFIELD ARMORY 331 450

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(11) 6 SEP 1949
(12) 28p

(16) ORD-TS2-2015

mt

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esd

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RIFLE, CALIBER .30, M1 - T65E1 AMMUNITION

A. GENERAL DESCRIPTION:

1. The modifications ~~herein~~ described are for the purpose of adapting U. S. Rifle, Caliber .30 M1 to fire Caliber .30 T65E1 ammunition.

B. DESCRIPTION OF MODIFICATIONS:

1. Barrel S.A. 21261

The exterior appearance and dimensions are the same as the U. S. Rifle, Caliber .30 M1. The interior is chambered and rifled for T65E1 ammunition with .0875 diameter gas-port.

2. Filler-piece S.A. 21807

This component prevents cartridges from moving toward front end of cartridge well. (The T65E1 cartridge is approximately .500 shorter than the Caliber .30 ball cartridge in overall length.)

C. DISASSEMBLY OF BARREL D35448:

1. Remove barrel (D35448 Caliber .30 M1) from receiver as outlined in Section V TM9-1275.

D. ASSEMBLY OF BARREL S.A. 21261:

1. Procedure outlined in Section IV TM9-1275 should be followed to assemble barrel S.A. 21261 (T65E1).

E. DISASSEMBLY OF BULLET GUIDE, FOLLOWER ARM AND OPERATING ROD CATCH ASSEMBLY.

1. Follow procedure outlined in Section II of FM23-5 ((2) Barrel and receiver group (b)).

F. ASSEMBLY OF FILLER-PIECE S.A. 21807:

1. With barrel and receiver group on a smooth surface, sights down and muzzle to the left, place filler-piece S.A. 21807 into receiver cartridge well with curved surface down, flat surface against front surface of receiver and winged section of filler piece against outside edge of receiver.

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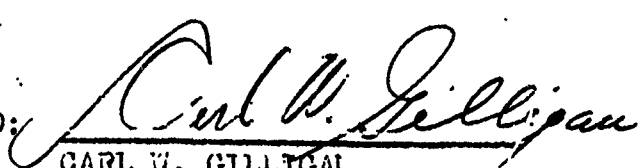
2.. Replace bullet guide, follower arm and operating rod catch assembly as outlined in FM 23-5.

3. Assemble rifle as outlined in FM 23-5.

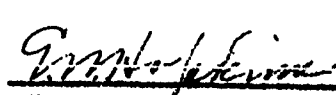
G. CLIP:

Standard loading procedure to be used to load clip.

SUBMITTED:


CARL W. GILLIGAN
Ordnance Engineer

CONCURRED:

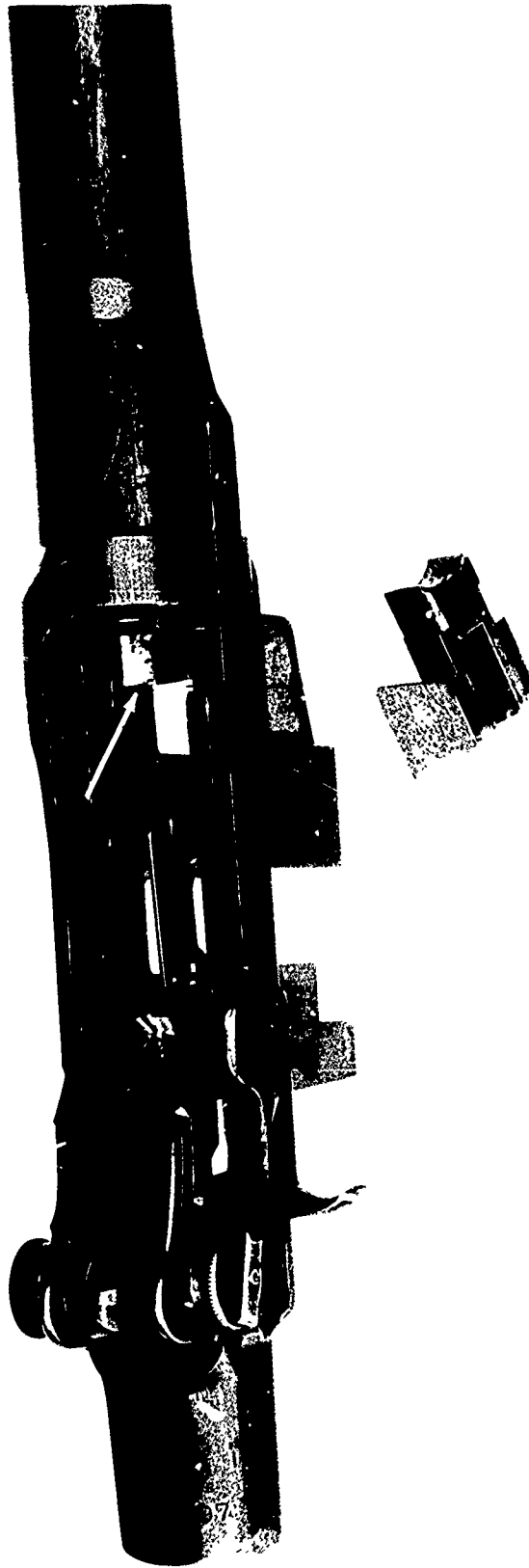

E. W. HOPKINS
Head Ordnance Engineer

APPROVED:


WILLIAM W. HOLMES
Major, Ord Dept

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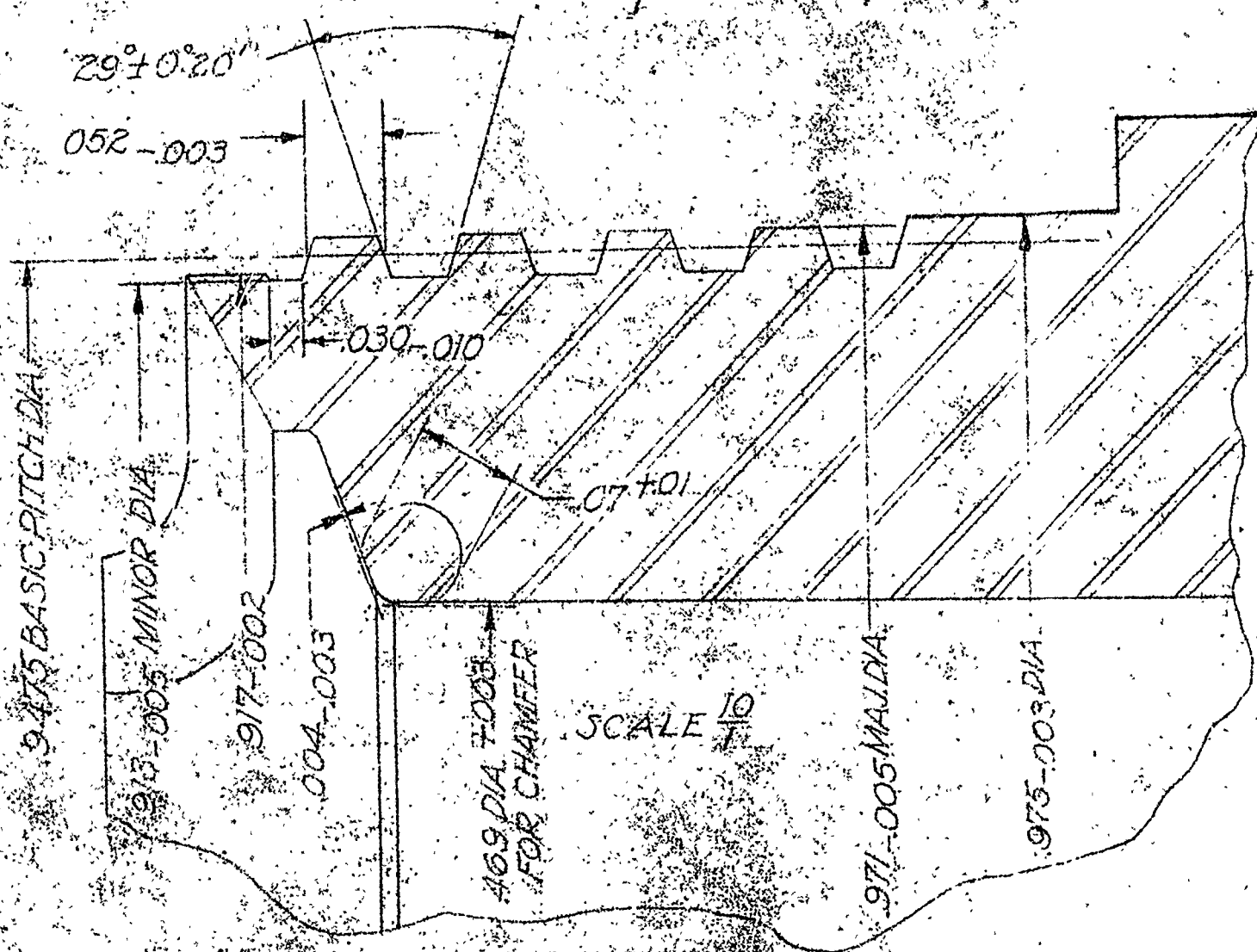
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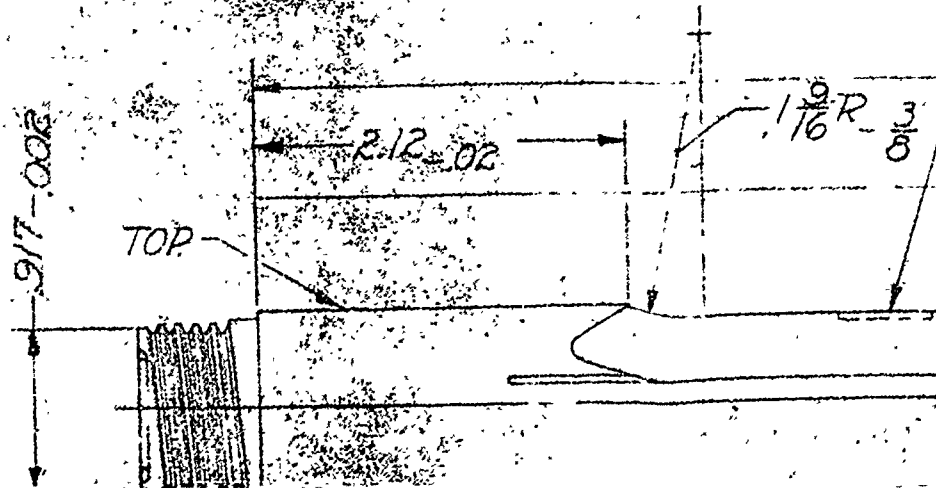
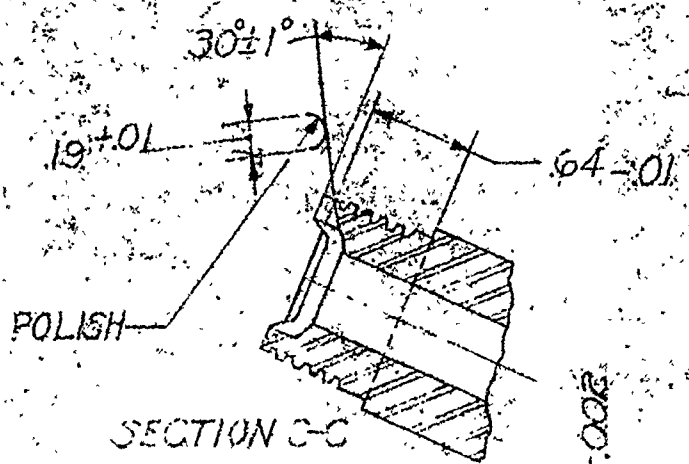
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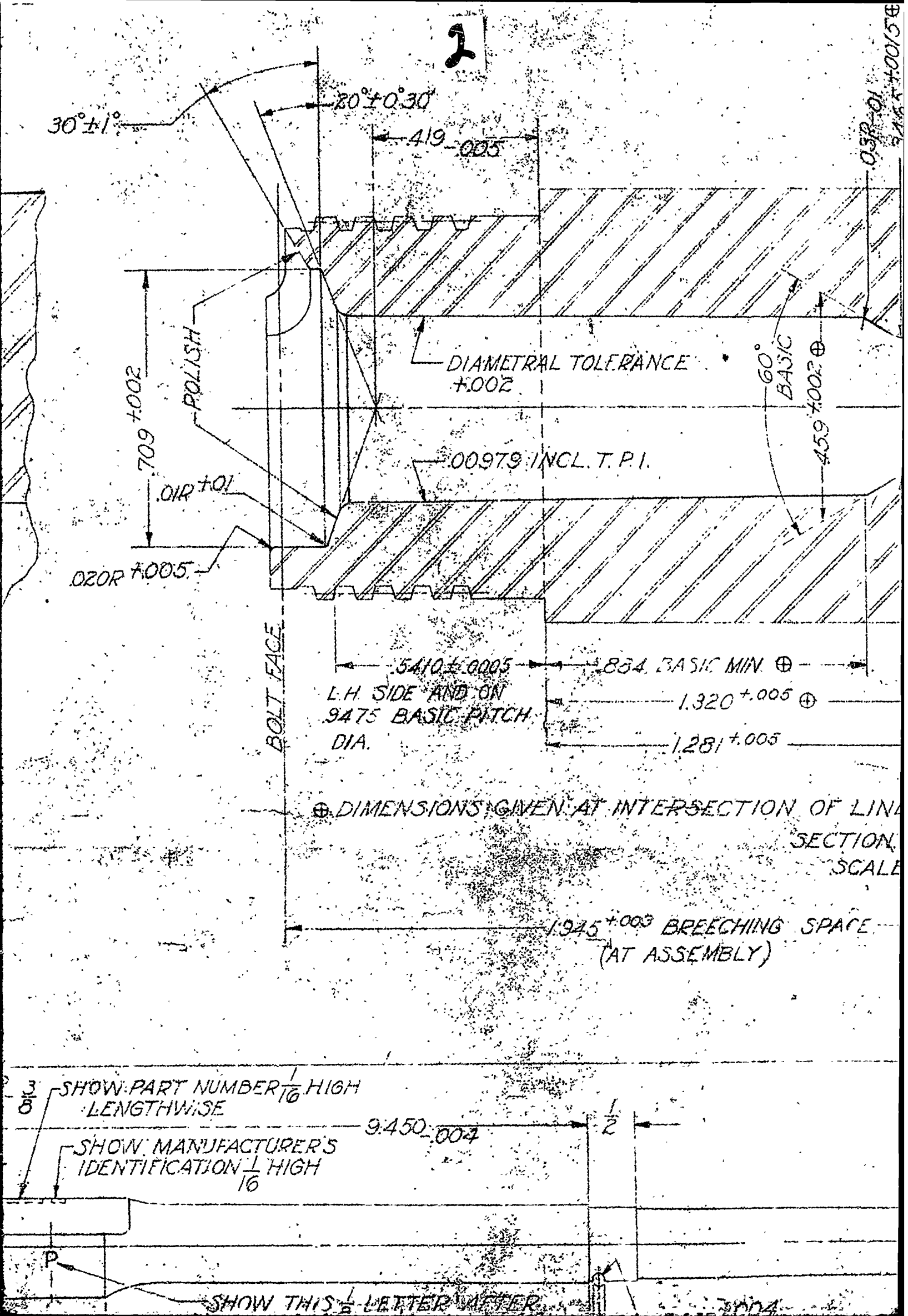
6783-SA SPRINGFIELD ARMORY-ORDNANCE DEPT 10 Jan. 1949

RIFLE, M1 CAL..30 (T65E1 CONVERSION)



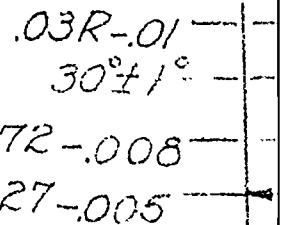
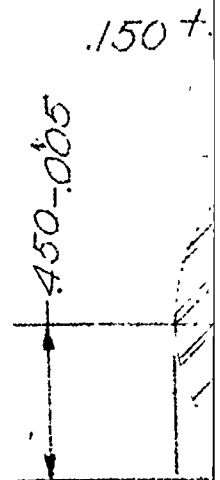
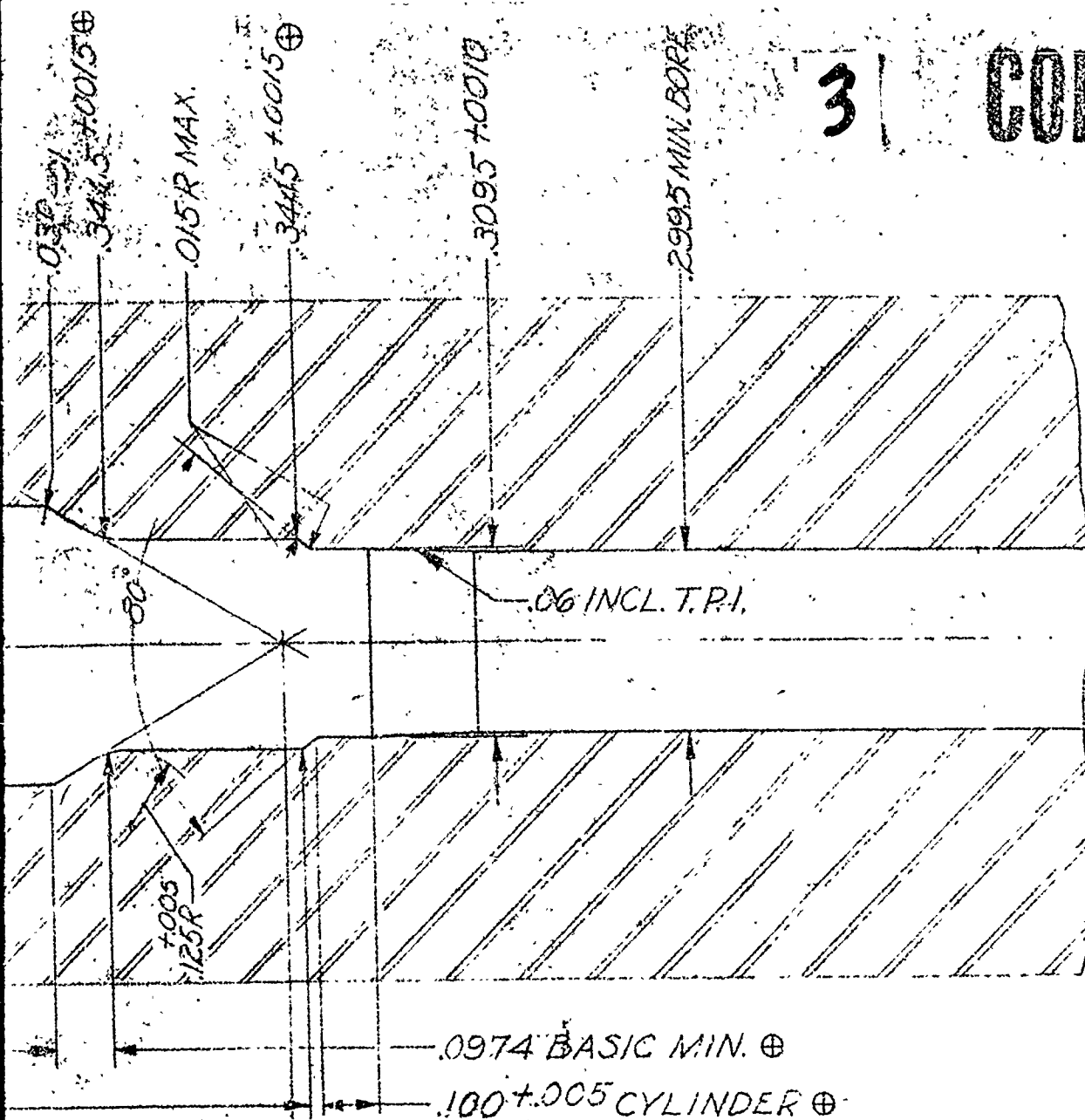
MILL 4 FULL THREADS, 10 PER INCH
 AND IN ALIGNMENT WITH FRC. IT
 END OF BARREL WITHIN .1 MINUTE
 OF ANGLE AND CONCENTRIC WITH
 IN .001 WITH $911-.005$ AND $917-.002$
 DIAMETERS





3

CONFIDENTIAL



LINES
SECTION A-A
SCALE $\frac{1}{4}$

FACE

$21 \frac{1}{4} - \frac{1}{8}$

CONFIDENTIAL

4

$.3075 \pm .0020$

16

$.2995 \pm .0020$

RIFLING
IN 12 1/2

$.150 \pm .008$

$30^\circ \pm 1^\circ$

$.03R-.01$

$.450 \pm .005$

$.460 \pm .005$

$.440R \pm .005$

$.03R-.01$

$30^\circ \pm 1^\circ$

$.05R-.03$

$.365 \pm .005$

$.172 \pm .008$

$.627 \pm .005$

SECTION B-B
SCALE $\frac{2}{1}$

$.124 \pm .001$

$\frac{1}{8}$

$.510 \pm .005$

$1\frac{1}{2}R-\frac{1}{2}$

H

$.259 \pm .004$

$60^\circ \pm 0^\circ 30'$

$.030 \pm .015$

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5

0.75 ± 0.0020

0.167 ± 0.010

0.995 ± 0.0020

RIFLING 4 GROOVES-1 TURN
IN 12 INCHES, R.H.

SCALE $\frac{5}{1}$

$30^\circ \pm 1^\circ$

03R-.01

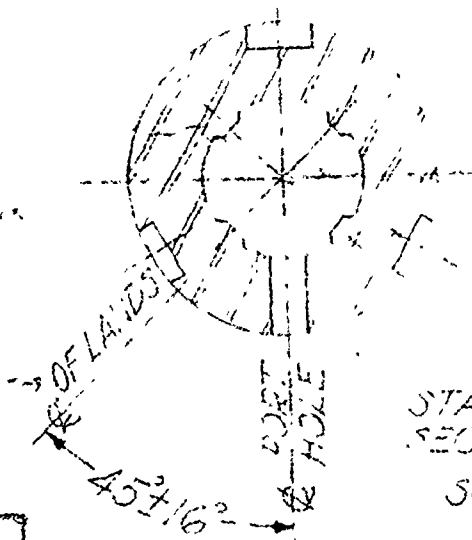
460-.005

440R-.005

.05R-.03

.365-.005

B



STANDARD
SECTION H-H

SCALE $\frac{3}{4}$

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90°±0°30' GAGE
LOCATION FROM
SURFACES D-D

120°±0°5'

9-.004

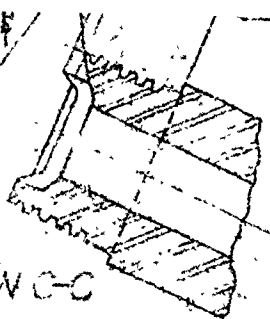
$60^\circ \pm 0^\circ 30'$

0.05 ± 0.015



POLISH

SECTION C-C



917-002

TOP

2.12-02

1/16 R 3/8

1/100-001

0.008 R 0.003

4. APPROX.

4.575-015

1.72-04

3/4 R 1/8

B

80-05

B

5.25 GAGE LOCATION

698-004

C OF 15-04 DIA. CUTTER

24-0-15'

110-0-15'

A

A

C OF CUTTER

THE THREAD START AND RUNOUT TO BE WITHIN 15° EITHER SIDE OF CENTER

6

$\frac{9}{16} R - \frac{3}{8}$ SHOW PART NUMBER $\frac{1}{16}$ HIGH LENGTHWISE

SHOW MANUFACTURER'S IDENTIFICATION $\frac{1}{16}$ HIGH

9.450-.004

$\frac{1}{2}$

SHOW THIS $\frac{1}{8}$ LETTER AFTER PROOF FIRING

.061R+.004

.030-.005

.156+.005

.015

1.R $\pm \frac{1}{4}$

.803-.005 GAGE SIZE

.726+.002 CYLIND. WITHIN

B

B

GAGE LOCATION

SHARP CORNE

22.56-.01

.77-.01

.663-.003

.690-.015

17.92

$21\frac{1}{4} + \frac{1}{16}$

.628-.00

17.4 GAGE LOCATION

21 GAGE LOCATION

$21\frac{1}{4} + \frac{1}{16}$

THIS VIEW OPTIONAL FOR W.R.A. ONLY

$21\frac{1}{4} - \frac{1}{8}$

004

APPLY .0003 MIN. CHROMIUM PLAT.
TO THIS SECTION. DO NOT SAND
BLAST OR APPLY PHOSPHATE. F
(DIMENSIONS WITHIN SECTION
ARE APPLICABLE AFTER PLAT)

002 CYLINDRICAL TO BE CONCENTRIC
WITHIN .01 OF DIMENSIONS "G" & "J"

ARP CORNER { OR MAY BE RECESSED $\frac{1}{32}$ WIDE AND
NOT MORE THAN .009 DEEP

DIMENSION "E" TO BE CO
.001 WITH DIMENSIONS

23.31 - .01

.01

21.805 - .010

.628 - .005 CYLINDRICAL

"F"

.617 - .010

.635 - .015

1.0 - .1

.6000 - .0

.015 17.925 - .050

$\frac{1}{4} + \frac{1}{16}$

22.143 - .006

.628 - .005

.599 - .005

ONLY

8

CONFIDE

510-005

$-1\frac{1}{2}R-\frac{1}{2}$

H

.259-.004

$60^{\circ}\pm 0^{\circ}30'$

$-.03\pm 0.015$

H

03 MIN. CHROMIUM PLATING
SECTION. DO NOT SAND
APPLY PHOSPHATE FINISH
INS WITHIN SECTION "M"
(CABLE AFTER PLATING)

$\frac{1}{8}$

.5613-32 NS

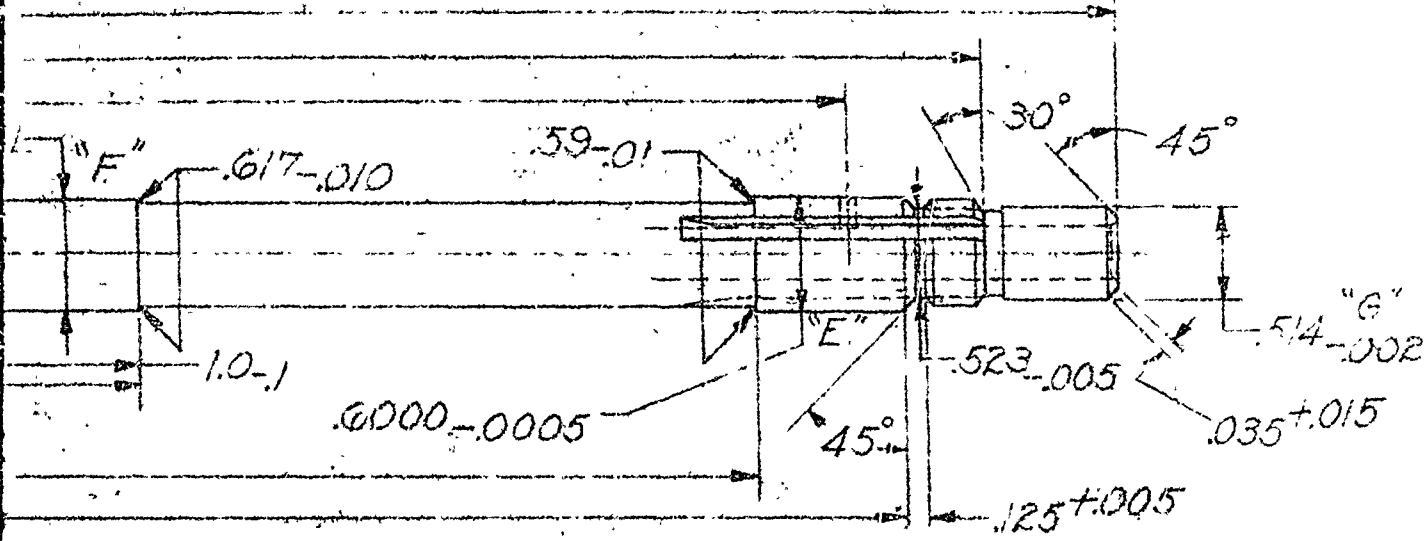
MAJOR DIA. .56
PITCH DIA. .54
MIN. OF DIA. .52

THE .5613-32 DIA.
COR WITH DIME

"M"

DIMENSION "E" TO BE CONCENTRIC WITHIN
001 WITH DIMENSIONS "F" AND "G"

.0875 DIA ± 0.0015



| NO. | DATE |
|-----|-----------------|
| 3 | 9-9-4 |
| | ALTERNA |
| | AND ALT. |
| | TION H-1 |
| | 176 ± 0.004 |
| | TO PERMI |
| | TOOLS ON |
| | NOTE: 30 |
| | FOR T65. |
| | TO, NOTE |
| | FOR T65 |
| | AMMUN |

BARREL

FINISH $\{ \}$

MANUFACTURING COMPONENT

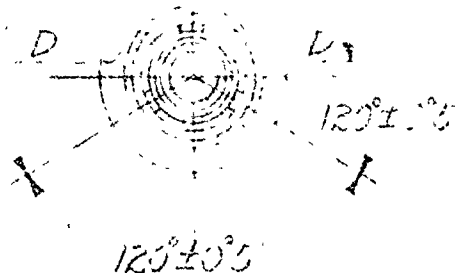
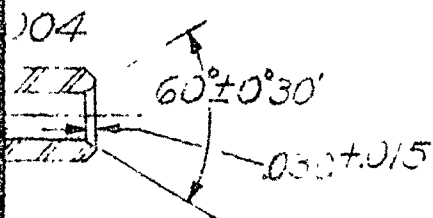
CONFIDENTIAL . 9

SCALE $\frac{1}{2}$

"This is a
notice to
the public
that the
Government
has decided
to take
action to
prevent the
spread of
the disease
and to
protect the
public health
and safety
of the
people of
the United
States."

10-10-64
WALTON, W. M.
SUSSEX D-2

12115



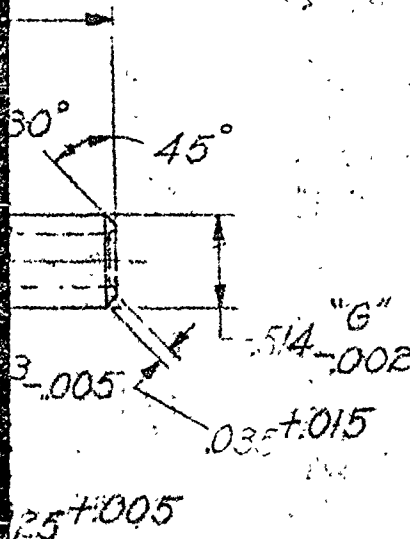
-32 NS

MAJOR DIA. .5613 - .0054
PITCH DIA. .542 - .003
MINOR DIA. .5232 MAX.

THE 5613-32 THREAD TO BE CONCENTRIC WITHIN
BORE WITH DIMENSION "G."

0875 D/47.0015

DWG. PERTAINS TO. 305-MI (T-35)



| NO. | DATE | WAS (OR ECO) | DR | CHK | REVISIONS | | | | |
|------------------------------------|--------|--------------|----|-----|-----------|---------|--|----|------|
| 3 | 9-9-49 | | | | NO. | DATE | WAS (OR ECO NO.) | DR | CHK. |
| ALTERNATIVE RIFLING | | | | | 1 | 6-16-49 | 1.540 BASIC MIN. TO, | | |
| AND ALTERNATIVE SEC | | | | | | | 1.548 BASIC MIN.; 1.99 ⁺ TO, | | |
| TION H-H, REMOVED; | | | | | | | 1.98 ⁺ TO; 1.9575 REF. FOR .459 | | |
| J76 ⁺ 304 OPTIONAL ONLY | | | | | | | DIA. TO, 1.9455 REF. FOR .459 | | |
| TO PERMIT UTILIZATION OF | | | | | | | DIA. ; .180 ⁺ CYLINDER, TO, | | |
| TOOLS ON HAND, REMOVED; | | | | | | | .100 ⁺ CYLINDER | HK | HDC |
| NOTE: 30R-MI BARREL | | | | | 2 | 8-5-49 | 1.515 BASIC MIN. TO, | | |
| FOR T65E1 AMMUNITION, | | | | | | | .584 BASIC MIN.; 1.98 ⁺ TO, | | |
| TO, NOTE: 30R-MI BARREL | | | | | | | .545 REF. FOR .459 TO, | | |
| FOR T65E1 AND T65E2 | | | | | | | .545 REF. FOR .459 TO, | | |
| AMMUNITION; | | | | | | | AND ON .445 CAL. PITCH DIA. ADDED | HK | HDC |

JUNE 23, 1948

NOTE:-

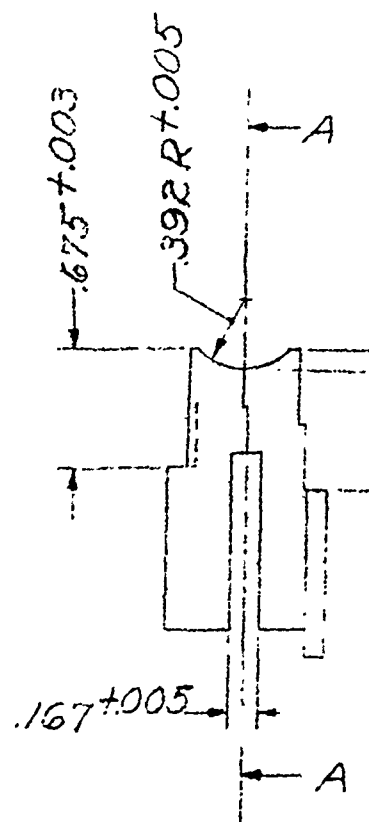
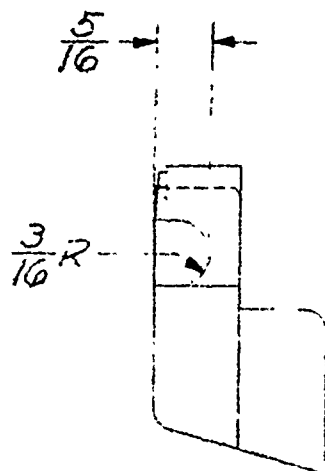
30R-MI BARREL FOR TC5E1 AND
TC5E2 AMMUNITION.

| | | | |
|-----------|---------|--------------------|-------------|
| DRAFTSMAN | CHECKER | ENGINEER | HDOPD. ENG. |
| H.D.C. | | <i>[Signature]</i> | |
| | | SA 21261 | 10 |

SCALE $\frac{1}{4}$

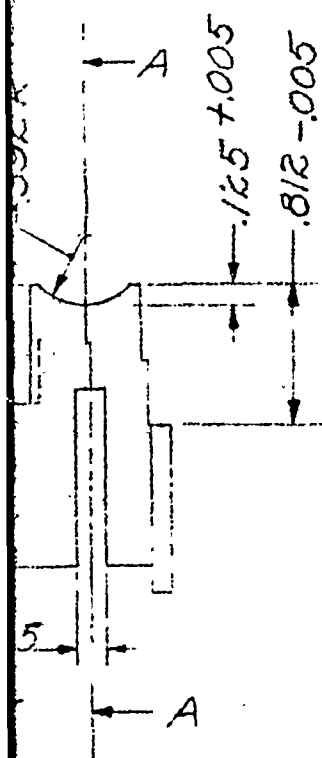
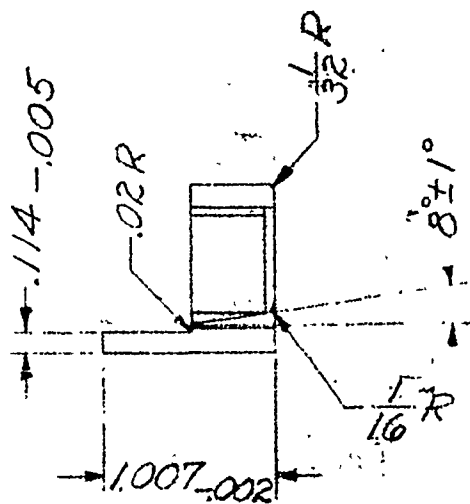
NOTE:-

ORIGINAL DIMENSIONS TAKEN FROM
HAND MADE MODEL.



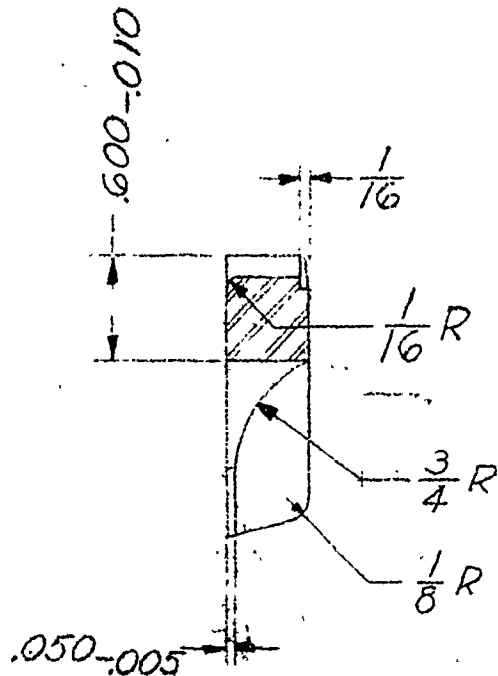
CONFIDENTIAL

2



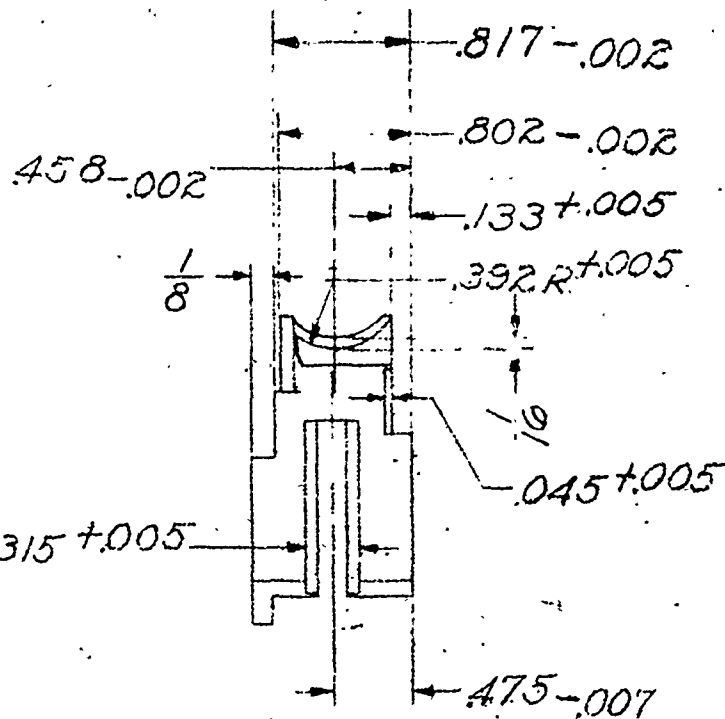
458-0

$8 \pm 1^\circ$
 $\frac{1}{16} R$



SECTION A-A

$.050 \pm .005$
TO SHARP CORNER



4

ORIGINAL DATE OF DRAWING DEC 31, 1948

REVISIONS

| NO. | DATE | WAS (OF ECO. NO.) | DR | CHK |
|-----|---------|--|----|-----|
| 1 | 8-24-49 | .826-.005, .70, .817 -.002; 1.055-.005, .70, 1.007-.002; .691-.002 RE- MOVED; .925-.002 ADDED; NOTE:-ORIGINAL DIMEN- SIONS TAKEN FROM HAND MADE MODEL., ADDED. | | |

$\frac{1}{16}$

$\frac{1}{16} R$

$\frac{3}{4} R$

$\frac{1}{8} R$

SECTION A-A

.817-.002

.802-.002

.133+.005

.392R+.005

$\frac{1}{16}$

.045+.005

.475-.007

HEAT TREATMENT & PROTECTIVE FINISH

$\sqrt{B5}$ FINISH
CASE HARDEN .005-.010

PHYSICAL PROPERTIES

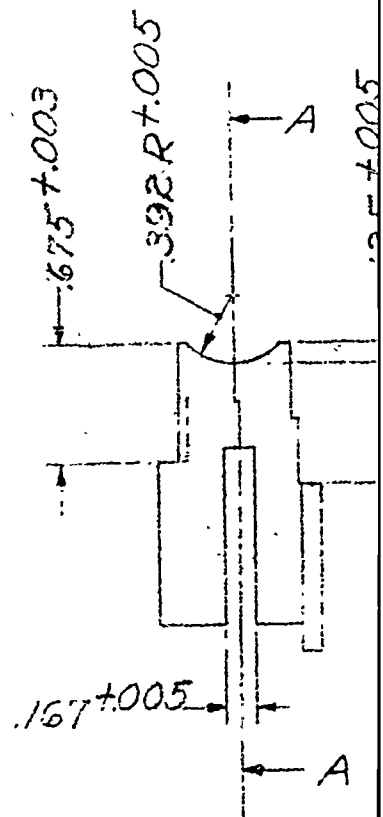
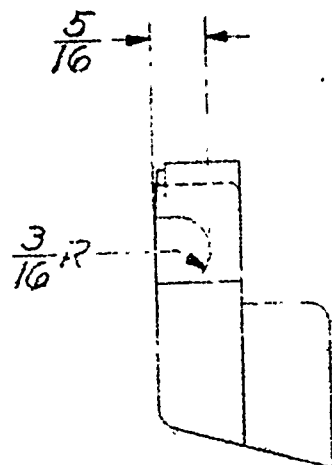
DRAWING PERTAINS TO

| TEMP. | DRG. NO. | MAJOR ITEM |
|-------|----------|-------------|
| TP | | 30R-M1(T35) |
| TS | | |
| EL 2 | | |
| RED. | | |
| DR | | |

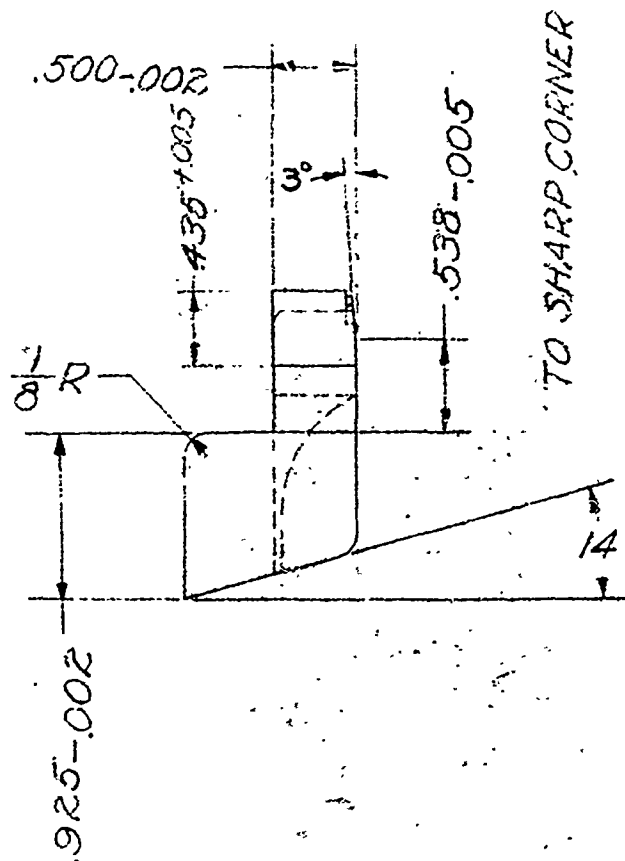
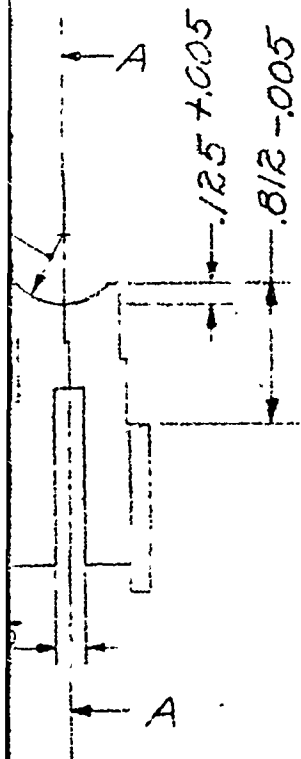
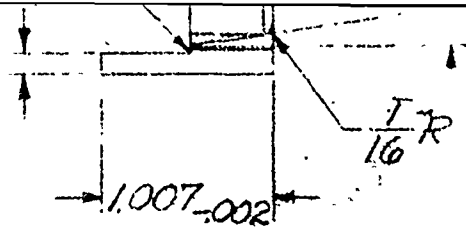
This drawing contains information of the
nature and design of the article shown in the
drawing and is to be used for the purpose of
manufacture only.

NOTE:-

ORIGINAL DIMENSIONS TAKEN FROM
HAND MADE MODEL.



BREAK SHARP CORNERS.



.458-.00

PIECE, FILLER
STEEL-WD 1020

6

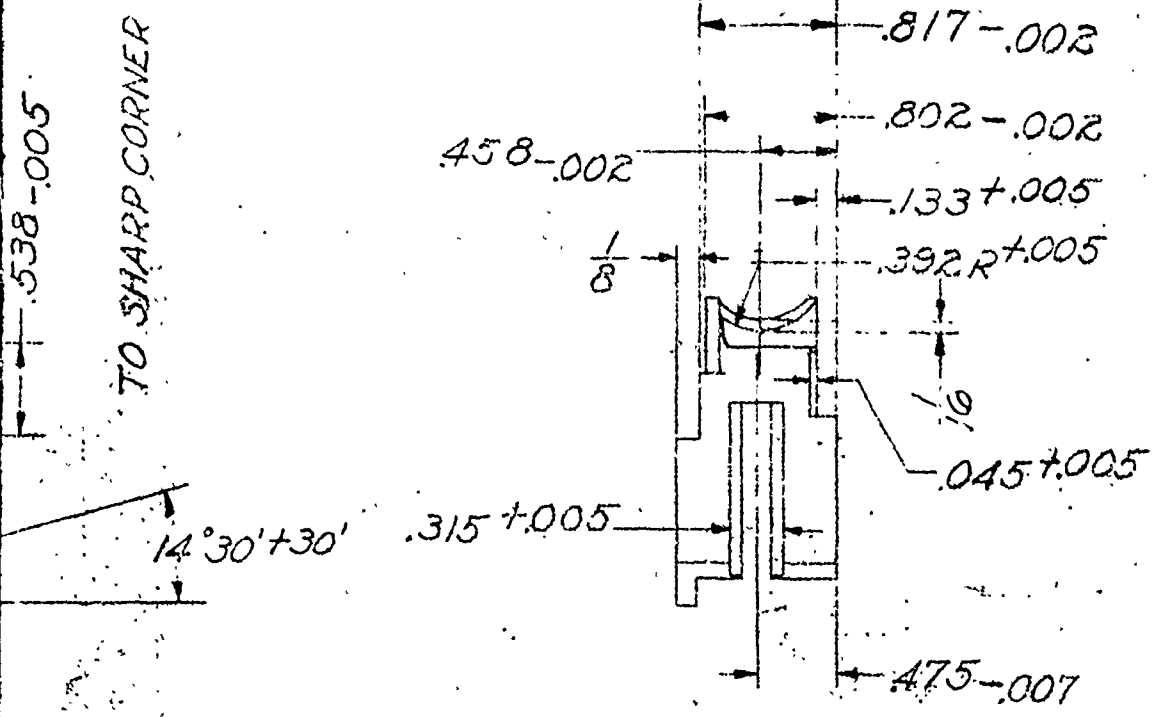
CONFIDENTIAL

$\frac{1}{16} R$

.050-.005

$\frac{1}{8} R$

SECTION A-A



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INTIAL

7

SECTION A-A

Technical drawing of a mechanical part, likely a piston or valve component, showing dimensions in inches. The drawing includes a cross-section view of the part and a corresponding dimensioned line drawing. The dimensions are as follows:

- Overall width: $.817 - .002$
- Top flange width: $.802 - .002$
- Inner bore diameter: $.133 + .005$
- Inner bore depth: $.392 R + .005$
- Inner bore diameter (bottom): $.045 + .005$
- Overall height: $.475 - .007$

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8

[illegible]

HEAT TREATMENT & PROTECTIVE FINISH

✓¹⁵ FINISH
CASE HARDEN .005-.010

| PHYSICAL PROPERTIES | | DRAWING PERTAINING TO | |
|---|--|---------------------------|-------------------|
| | | ORG NO. | MAJOR ITEM |
| YP | | | 30R-MI(T35) |
| TS | | | |
| EL 2 | | | |
| RED. | | | |
| BR | | | |
| ROCK. | | | |
| WEIGHT | | DO NOT | APPLY PART NO. |
| | | DO | (As Specified) |
| SCALE | DRAFTSMAN H.D.C. | CHECKER | |
| TOLERANCES ON DIMENSIONS (Unless Otherwise Specified) | TRACER | CHECKER | |
| FROM FIN. SURFACES DECIMAL $\pm .01$ FRACTIONAL $\pm .01$ ANGULAR ± 10 | ENGINEER <i>[Signature]</i> | ENGINEER | |
| FROM UNFIN. SURFACES FRACTIONAL \pm ANGULAR \pm | SUBMITTED | | |
| SHARP CORNERS AND EDGES BROKEN TO APPROX. IN. | APPROVED BY ORDER OF THE CHIEF OF ORDNANCE | | ORD DEPT U S ARMY |
| ORD SIZE | ORD DEPT U S ARMY | | ORD DEPT U S ARMY |
| G SA 21807 | | ORDNANCE DEPT U S ARMY | |

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